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1.0 EXECUTIVE SUMMARY

The International Union for Conservation of Nature (IUCN) estimates 20 million metric tons of plastic waste end up in the environment every year. To address this growing crisis, Solid Cycle Company introduces Rebricco – an eco-friendly and safer cement alternative made from plastic waste. Rebricco helps reduce plastic pollution while providing a sustainable alternative to traditional cement. Additionally, it is **cost-effective and user-friendly**, making it a practical choice for the construction industry.

Research at the University of Bath showed that replacing sand with similarly size and shaped plastic waste will produce concrete, which is nearly as strong as conventional concrete mixtures, potentially saving 820 million tons of sand annually. Rebricco is an eco-friendly product because it can reduce plastic waste and minimize the negative impacts on our planet. Moreover, it is durable and safe since its resistant cracking, lightweight and durable to use by our customer. Besides, it also supports sustainability goals which align perfectly with the increasing demand for green building materials and the government regulation on plastic waste management. Finally, Rebricco is also cost-effective, which provides a more affordable alternative to traditional cement and the customer will be satisfied with the performance of the product.

Our primary consumers include construction companies, contractors, hardware merchants and industrial companies. Rebricco represents an innovative and convenient solution that the businesses can benefit from a cost-efficient and reliable cement alternative.

2.0 PRODUCT OR SERVICE DESCRIPTION

These days, a wide range of groups are concerned about plastic waste around the world, including World Health Organization (WHO), environmental organizations, consumers, governments and other organization as the primary issue with plastic waste is its widespread environmental pollution. The increasing portion of the plastic waste in our environment such as landfills, residents' area and the ocean could give negative impact to living organism involving marine life which can ingest plastic debris leading to injury or death. Our company came up with a great solution for this problem by producing cement that is made by plastic waste as a substitution to the traditional cements. Our product, Rebricco, provides high quality cement that is also strong, durable and convenient for our users.

Rebricco gives a great alternative for those that are highly concerned about environmental pollution. Our product is an eco-friendly product which comprise of materials such as 80% limestone, 20% clay, 13% plastic waste, 2% iron ore and 5% quarry dusty. Plastic waste is a substitution of sand from traditional cement. Our product is safe to use since it is lightweight because the mixture of the plastic in the cement makes it lighter and reduces the load for the material. This will make it easier and faster to transport and build the building. In addition, plastic material is ideal for humid and rainy climates. This will protect the cement from decay and provides a long-lasting solution, reducing maintenance and replacement costs over time. It also provides high thermal insulation properties that will improve energy efficiency in a building.

Furthermore, our product is cost-effective despite its high quality that will attract more people to buy it. Plastic waste is cheaper than traditional raw materials that will save both material and maintenance costs. The durability and longevity of the products also will save the customer's budget rather than spend it for its maintenance purpose. Our company maintains the quality and makes it versatile by producing it in a variety of shapes that are suitable for various construction applications. For instance, our cement works well for making bricks, tiles, and concrete structures based on customers' request. Thus, Rebricco can be used in residential and commercial construction, landscaping and outdoor installations and road paving building materials.

Additionally, based on Ersan et al. observation, it was found that carbon emissions were lowered by 13% as compared to conventional ones. This can be shown when substituting the cement with plastic, it will reduce the cement production emissions. Next, our production process helps reduce plastic incineration, which is commonly used to manage plastic waste but releases CO₂ into the environment. Moreover, incineration not only releases CO₂ but also emits other harmful pollutants. By repurposing plastic waste into cement, we offer a more environmentally friendly solution to plastic disposal.

3.0 TECHNOLOGY DESCRIPTION

Nowadays, one of the biggest environmental challenges is the rapid increase in plastic wastes day after day. Plastic production keeps on increasing, and most of this plastic waste is dumped into already overcrowded landfills. In turn, the landfills are no longer capable of bearing the increased volume of plastic, resulting in complications during proper disposal processes. In as much as many initiatives for recycling and reuse are being initiated, plastic wastes are still produced in increasing amounts. This aggravates the challenge of plastic waste management since in most cases, the plastic remains piled up with no control whatsoever.

As young entrepreneurs who are concerned about the state of the environment, we decided to find an innovative solution to tackle this issue. We have made efforts to transform unmanaged plastic waste into something useful by producing new products from this plastic material. Through research and innovation, we have successfully created a new product named Rebricco, which is made from plastic. Rebricco is a product designed to be used in the construction industry to replace cement, which is a fundamental material commonly used in infrastructure development. By producing products like Rebricco, we are able to reduce the amount of plastic waste and, at the same time, make use of the existing plastic for more valuable and durable purposes.

In our business, we are focused on the production of plastic-made products for use in different aspects of development, especially in construction. Keeping in view the large volume of plastic waste generated every day, we strongly believe that by producing Rebricco, we are in a position to contribute with an environmentally friendly and competitive solution to the industry. It also does not only contribute to the reduction of plastic pollution but also helps users through lower costs, ease of usage, and stability in construction.

The appearance of Rebricco is like regular cement; however, with a different procedure for manufacturing. We heat plastic first, then cut it into fine particles, making the material resemble dust. Afterwards, it will turn into liquid form. A liquid plastic, made from waste of this sort, is poured into molds to produce the products of desire, say bricks. Thus, in respect of users, they get their choice as well as a better size for these products in whatever shape according to their requirements. The production phase not only diminishes waste and pollution of plastics but also invites an opportunity towards the eco-friendlier replacement of this traditional cement application by the construction sectors at low costs. Equipped with Rebricco, we can come up with more environmentally friendly products and participate directly in preserving nature for future generations.

We did a lot of in-depth research into how the future of Rebricco would look like in the market to make sure our product is a long-term success. The solution we provide will be for the betterment of the environment but should also compete with traditional building materials such as